NOVEMBER/DECEMBER 2024

BACS32/FACS32/CACS32 — STATISTICAL METHODS AND THEIR APPLICATIONS I

Shanmuga Industries Arts & Science College T.V.Malai

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is data? Give example.
2. Data set: 1,2,5,6,2,1,4,8,9,3,3,5,6,7,7,9. What is the percentile ranking of '5'?
3. Find the mean and mode for: 14,63,23,43,22,18,33.
4. Define arithmetic mean.
5. Find the mean deviation about the mean of the following data

Size (x) :	1	3	5	7	9	11	13	15
Frequency (f) :	3	3	4	14	7	4	3	4

6. What is Range?
7. What are the measures of skewness?
8. What is kurtosis?
9. How correlation is calculated?
10. Write the simple regression equation.

14. (a) The following measures were computed for a frequency distribution: Mean =50, coefficient of variation = 35 % and Karl Pearson's co-efficient of Skewness = – 0.25. Compute standard deviation, Mode and Median of the distribution.

Or

(b) Calculate Karl-Pearson's coefficient of skewness for the given data X = 12, 18, 18, 22, 35.

15. (a) The table below shows the number of absences, x, in a calculus course and the final exam grade, y, for 7 students. Find the correlation coefficient and interpret your result.

x	1	0	2	6	4	3	3
y	85	80	70	55	90	90	95

Or

(b) Write the elements of simple regression equation.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain classification of data with its types and tabulation of data with relevant examples.

17. Write the relationships between arithmetic, harmonic and geometric mean.

18. Life of bulbs produced by two factories A and B are given below.

Length of life (in hours)	Factory A (Number of bulbs)	Factory B (Number of bulbs)
550-650	10	8
650-750	22	60
750-850	52	24
850-950	20	16
950-1050	16	12
	120	120

The bulbs of which factory are more consistent from the point of view of length of life?

19. The following figures relate to the size of capital of 285 companies:

Capital (in Rs.lacs)	1-5	6-10	11-15	16-20	21-25	26-30	31-35	Total
No.of companies	20	27	29	38	48	53	70	285

Compute the Bowley's and Kelly's coefficient of skewness and interpret the results.

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